UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

Charles E. Venditti

Manager, Regulatory Compliance

CountryMark Energy Resources, LLC

7116 Eagle Crest Blvd, Suite C

Evansville, Indiana 4 7715

DEC 2 8 2016

REPLY TO THE ATIENTION OF:

RE: 40 CFR 60 OOOOa, Well Completion Request for Applicability

Dear Mr. Venditti,

Thank you for your letter, dated August 30, 2016, requesting a determination of applicability in

regards to well completions performed by CountryMark Energy Resources, LLC (Country Mark

or you) in the Illinois Basin. Your request asks EPA to determine if Country Mark's activities

meet the definition of hydraulic fracturing under the New Source Performance Standards

(NSPS) Subpart OOOOa- Standards of Performance for Crude Oil and Natural Gas Facilities

for which Construction, Modification or Reconstruction Commenced After September 18, 2015.

The following determination also takes into account information provided to Natalie Topinka, of

my staff, in a phone conversation of September 23 , 2016, and written supplemental information

provided via e-mail on September 26, 2016.

The NSPS, at 40 C.F.R. § 60.5430a, defines hydraulicfi-acturing as follows:

Hydraulic fracturing means the process of directing pressurized fluids containing

any combination of water, proppant, and any added chemicals to penetrate tight

formations, such as shale or coal formations, that subsequently require high rate,

extended flowback to expel fracture fluids and solids during completions.

CountryMark's operations include exploration and production of crude oil extracted from

geologic formations in the Illinois Basin located primarily in Illinois, southwest Indiana, and

western Kentucky. After drilling, CountryMark stimulates the well by directing pressurized

fluids into the well. These fluids contain water, proppant, and added chemicals. CountryMark

may also subject a well to "acid treatment," whereby the pressurized fluid contains water and

added chemicals but no proppant.

Your request focuses on the phrases "tight formations" and "high rate, extended flowback"

within this definition. 1 Therefore, our response focuses on the issues raised in your request

related to these portions of the definition of hydraulic.fracturing.

In your August 30, 2016 letter, you state that the vast majority of Illinois Basin reservoirs from

which eountryMark produces do not constitute tight formations, such as shale or coal

formations, because the "conventional" reservoirs targeted by eountryMark are different from

"unconventional" shale and coal reservoirs. You then provide information on grain size, organic

content, permeability, and producibility characteristics, comparing Illinois Basin carbonate and

sandstone formations to shale and coal formations. Due to claimed differences in these

characteristics, especially the greater permeability of sandstone and carbonate formations as

compared to shale formations, you state that the Illinois Basin reservoirs where eountryMark

operates do not meet the "tight formations" portion of the regulatory definition of hydraulic

fi'acturing. Similarly, you state that your operations result in "little to no flowback from

formations with higher quality reservoir properties than shale or coal." In the supplemental

documentation you provided on September 26, 2016, you state that eountryMark infers that the

inclusion of the terms "tight formations" and "high rate, extended flowback" in the regulatory

definition of hydraulic fracturing were intended "to distinguish the varying completion styles of

small, vertical, "conventional" drilling targets (such as those drilled by eountryMark) from

large, horizontal, tight, "unconventional" drilling targets (such as shale and coal)." You go on to

state that eountryMark assumes EPA made distinctions "due to the difference in potential

greenhouse gas emissions from the dissimilar formation types and completion styles." EPA

disagrees that the descriptive terms "tight formations" and "high rate, extended flowback" in the

NSPS definition of hydraulic fracturing were intended to make distinctions between the

variations in types of wells that may be hydraulically fractured, and therefore exclude from the

definition of hydraulic fracturing any subset of those operations undergoing hydraulic fracturing.

When it promulgated the NSPS, EPA made it clear that it was regulating the oil and natural gas

production, processing, transmission, and storage source category as a whole because the

category contributes significantly to air pollution that may reasonably be anticipated to endanger

public health and welfare. 81 Fed. Reg. 35824, 35833 (June 3, 2016). The requirements in the

NSPS were based on EP A's determination of the ·best system of emissions reduction (BSER) for

reducing greenhouse gas (GHG) and volatile organic compound (VOe) emissions across a

variety of "emission sources in the oil and natural gas source category (i.e., production,

processing, transmission, and storage)." Id. at 35825. EPA recognized that hydraulically

fractured oil well completion activities vary across, and even within, formations. Background

Technical Support Document for the Proposed New Source Performance Standards, 40 eFR Part

60, Subpart OOOOa, p. 12 (August 2015). When estimating GHG and voe emissions to

determine BSER, EPA acknowledged that potential emissions and flowback duration varied

considerably for hydraulically fractured oil wells. See id. p. 16-20. Notwithstanding this

variability, EPA decided to regulate GHG and VOe emissions from hydraulically fractured oil

well completions, although wells that produce less than 300 scf of gas per stock tank barrel of oil

are only subject to record-keeping and reporting requirements. 40 e.F.R. § 60.5375a(g).

1 EPA notes that Country Mark commented during the public comment period on the proposed version of the NSPS,

which included a proposed definition of hydraulic fracturing that is identical to that included in the final rule.

Country Mark, however, did not com1nent on the definition of hydraulic fi·acturing.

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EPA determines that ColmtryMark's well completions in the Illinois Basin are covered under the

NSPS. The general, descriptive term "tight fonnations" in the NSPS definition of hydraulic

fracturing must be interpreted to effectuate EPA's broad intent as expressed in the NSPS

rulemaking. When it responded to a commenter claiming that the definition of hydraulic

fracturing was overly broad, EPA clarified that it intended "to include operations that would

increase the flow of hydrocarbons to the wellhead." NSPS Response to Comments docmnent

(RTC), p. 3-113. In a telephone conversation with Natalie Topinka, you clarified that the process

of directing pressurized fluids into the formations into which Country Mark operates

(referred to

as "hydraulic fracturing" by CountryMark itself) is necessary to stimulate flow, increase yield,

and produce any notable quantity of oil. In other words, injecting pressurized fluids is necessary

to increase the flow of oil to the wellhead, and for that reason, we conclude that the formations

within the Illinois Basin that CountryMark has identified are considered "tight formations" for

the purposes of the NSPS. Contrary to CountryMark's position, EPA's reference to shale or coal

formations as examples of tight formations in the definition of hydraulic fracturing was not

intended to limit applicability of the NSPS to these particular types of geologic formations alone.

In short, the evaluation of applicability on a well-by-well or formation-by-formation basis under

the definition of hydraulic fracturing is inconsistent with EPA's express intent to address GHG

and VOC emissions and from all hydraulically fractured oil well completions.

Similarly, EPA believes the estimated flowback time from Country Mark's well completions is

considered "high rate, extended flowback" as those terms are used in the NSPS definition of

hydraulic fracturing. During completions of CountryMark wells, the flowback expels fracture

fluids and solids. EPA recognized in promulgating the NSPS that the flowback period of a well

completion is highly variable, and there is no flowback period cut-off specified in the rule. In

response to a public comment seeking an exemption for wells that are completed over a short

period of time (less than 24 hours), EPA acknowledged that there is a range offlowback periods,

finding that requested exemption was not warranted. RTC, p. 3-64. Consequently, EPA

concludes that Country Mark's estimated flowback rate and duration for its wells is considered

"high rate" and "extended" under the NSPS definition of hydraulic fracturing.

Pursuant to the discussion above, EPA determines that CountryMark's operations in the Illinois

Basin meet the definition of hydraulic fracturing as defined in 40 C.F.R. § 60.5430a and are

therefore subject to applicable requirements of Subpart OOOOa, including but not limited to the

standards for well affected facilities at 40 C.F.R. § 60.5375a.

If you have additional questions regarding this determination, please contact Natalie Topinka at

312-886-3853 or 1opinka.natalie@cpa.gov. Ms. Topinka consulted with staff in the Office

of Air

Quality Planning and Standards and Office of Enforcement and Compliance Assurance in

responding to your request.

Sincerely,

s~g~

Sara J. Breneman

Chief

Air Enforcement and Compliance Assurance Branch

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CERTIFICATE OF MAILING

I, Kathy Jones, certify that I sent the letter "40 CFR 60 OOOOa, Well Completion Request for

Applicability" by Certified Mail, Return Receipt Requested, to:

Charles E. Venditti

Manager, Regulatory Compliance

CountryMark Energy Resources, LLC

7116 Eagle Crest Blvd, Suite C

Evansville, Indiana 47715

On the d qti day of ~.QCet"I\ \>e.<z_ 2016

Kathy Jones

Program Technician

AECAB, PAS

CERTIFIED MAIL RECEIPT NUMBER: